

# DECREASING INFANT EXPOSURE TO PCDD/FS AND PCBS THROUGH BREAST MILK IN FINLAND

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**Background and Aims:** PCDD/Fs and PCBs are environmental pollutants that are extremely persistent in the environment and accumulate in the human body. Because of their high lipophilicity, they are enriched in the fatty tissue. For women, lactation is the main route of elimination from the body. On a body weight basis, infants may be exposed to many orders of magnitude higher concentrations of these chemicals than adults. The main human health effects at current exposure levels are considered to be developmental effects in the foetus and children. In addition, these compounds are suspected to disturb the thyroid hormone system even at low exposure levels. The Finnish National Institute for Health and Welfare (THL) has monitored the levels of PCDD/Fs and PCBs in Finnish breast milk since 1987, and in 2000, PBDEs and DDT metabolites were added in the monitoring programme.

**Methods:** Sampling was conducted in 1987-88, 1993-94, 2000, and 2005. Another sampling round is currently on the way, and expected to yield results in 2011. The number of samples in each round was around 300, and samples were collected initially from two areas in southern Finland representing rural and urban areas. Later, northern areas were included in the studies. The samples were analysed for PCDD/Fs and PCBs, and from 2000 on also for PBDEs and DDTs. The samples have been stored for future needs.

**Results:** Between 1987 and 2005, the concentrations of PCDD/Fs and PCBs decreased significantly from 26.3 to 6.80 pg TEQ<sub>1998</sub> g<sup>-1</sup> fat (74.1%) and from 25.5 to 4.10 (83.9%), respectively. Based on the slope of the decrease, a further 10–15% decrease is expected between 2005–2011.

**Conclusions:** The study has shown a significant decrease in infant exposure to PCDD/Fs and PCBs. In 2011, information on current exposure will be obtained.

**References:** -